

# **INCREASING THE RELIABILITY OF THE INTERNET OF THINGS**

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The Internet of Things (IoT) is an emerging technology working with multiple sensors and wireless communication protocols. People are utilizing smart & intelligent devices towards comfort life using IoT. Home automation is one among them coordinating with the actuators and sensors connected within the network. The IoT network has many layers like a controller, device, gateway, server, and application layer. The device layer is connected with many small-sized numbers of devices and there are chances to occur faults in this layer. The definition of IoT is fundamental in understanding the problem of reliability within the paradigm. The Internet of Things (IoT) aims to transform the human society toward becoming intelligent, convenient, and efficient with potentially enormous economic and environmental benefits. Reliability is one of the main challenges that must be addressed to enable this revolutionized transformation. The Internet has transformed the way people communicate with each other. The Internet of Things (IoT) aims to take this stride further to seamlessly connect people and various things, transforming society toward becoming intelligent, convenient, and efficient (ICE) with potentially enormous economic and environmental benefits. The IoT has developed rapidly, spanning diverse application

domains from healthcare to home automation, environmental monitoring to smart energy, and intelligent transportation to smart buildings, smart manufacturing smart agriculture, and smart military to the smart ocean [1].

Due to the safety-critical or mission-critical nature of the IoT applications, it is imperative that the IoT system operate reliably throughout the intended mission time. In other words, reliability is one of the crucial requirements for the adoption of the IoT in critical applications [2]. Reliability analysis and design are therefore indispensable step before IoT systems can be widely deployed for safety-critical and mission-critical applications. The reliability of the smart grid itself is of great importance. The safety-critical or mission-critical nature of IoT applications and the rapid growth of data generated require highly reliable and efficient data storage and processing solutions. Cloud computing is one such solution that has played a crucial role in the recent IoT developments [3]. Additional new aspects of system complexity and dynamics may arise, making the existing reliability models and solutions inadequate or inaccurate. New and efficient reliability models and tools are expected for capturing the new features and behaviors, leading to more effective and accurate IoT system reliability analysis, optimization, and design. The ultimate goal is to transform our society toward being ICE (intelligent, convenient, and efficient).

## References

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